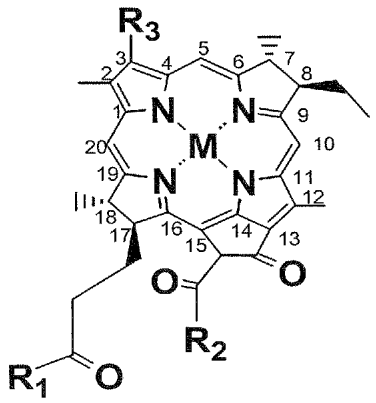
AMENDMENTS TO THE CLAIMS:

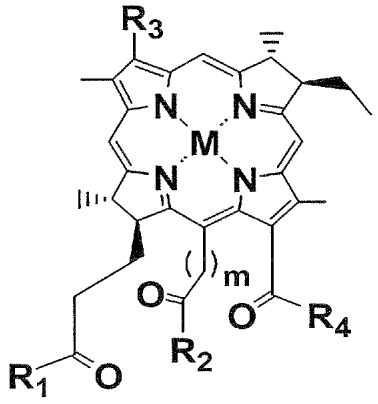
This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A bacteriochlorophyll ~~derivative~~compound containing at least one~~, preferably two or three,~~ negatively charged ~~groups~~ group or acidic ~~groups~~ group that ~~are~~ is converted to negatively charged groups at the physiological pH, of the formula I or II:



(I)



(II)

wherein

M represents 2H or a metal atom selected from the group consisting of divalent Pd, Pt, Co, Sn, Ni, Cu, Zn and Mn, or trivalent Fe, Mn and Cr;

R_1, R_2, and R_4 each independently is Y- R_5;

Y is O, S or -NR_6;

R_3 is selected from the group consisting of $-CH=CH_2$, $-C(=O)-CH_3$, $-C(=O)-H$, $-CH=NR_7$, $-C(CH_3)=NR_7$, $-CH_2-OR_7$, $-CH_2-SR_7$, $-CH_2-NR_7R'_7$, $-CH(CH_3)-OR_7$, $-CH(CH_3)-SR_7$, $-CH(CH_3)-NR_7R'_7$, $-CH(CH_3)Hal$, $-CH_2-Hal$, $-CH_2-R_7$, $-CH=CR_7R'_7$, $-C(CH_3)=CR_7R'_7$, $-CH=CR_7Hal$, $-C(CH_3)=CR_7Hal$, and $-C\equiv CR_7$;

R_5 , R_6 , R_7 and R'_7 each independently is H or selected from the group consisting of:

(a) C_1-C_{25} hydrocarbyl optionally containing one or more heteroatoms selected from the group consisting of —O, S and N, carbocyclic or heterocyclic moieties such as pyridyl, and/or optionally substituted by one or more functional groups selected from the group consisting of halogen, oxo, OH, SH, CHO, NH_2, $CONH_2$, a negatively charged group, and an acidic group that is converted to a negatively charged group at the physiological pH;

(b) a residue of an amino acid, a peptide or of a protein; and

(c) when Y is O or S, R_5 may further be R_8^+ ;

m is 0 or 1; and

R_8^+ is H^+ or a cation;

provided that:

(i) at least one of R_5, R_6, R_7 and R'_7 is a hydrocarbon chain as defined in (a) above substituted by a negatively charged group or by an acidic group that is converted to a negatively charged group at the physiological pH; or

(ii) at least one of R_1, R_2, and R_4 is OH, SH, $O^-R_8^+$ or $S^-R_8^+$; or

(iii) at least one of R_1, R_2, and R_4 is OH, SH, $O^-R_8^+$ or $S^-R_8^+$ and at least one of R_5, R_6, R_7 and R'_7 is a hydrocarbon chain substituted by a negatively charged group or by an acidic group that is converted to a negatively charged group at the physiological pH; or

(iv) at least one of R_1, R_2, and R_4 is OH, SH, $O^-R_8^+$ or $S^-R_8^+$ and at least one of R_5, R_6, R_7 and R'_7 is a residue of an amino acid, a peptide or of a protein; or

(v) at least one of R_5, R_6, R_7 and R'_7 is a hydrocarbon chain substituted by a negatively charged group or by an acidic group that is converted to a negatively charged group at the physiological pH and at least one of R_5, R_6, R_7 and R'_7 is a residue of an amino acid, a peptide or of a protein;

wherein said negatively charged group is selected from the group consisting of COO^-, COS^-, SO_3^-, and PO_3^{2-} and said acidic group that is converted to a negatively charged group at the physiological pH is selected from the group consisting of COOH, COSH, SO_3H, and PO_3H_2;

but excluding the compounds of formula I wherein M is as defined, R_3 is $-C(=O)CH_3$, R_1 is OH or OR_8^+ and R_2 is $-OCH_3$, and the compound of formula II wherein M is 2H, R_3 is $-C(=O)CH_3$, R_1, R_2 and R_4 are OH, and m is 0 or 1. ~~or both, excluding pentacyclic~~

~~bacteriochlorophyll derivatives having a free CH_2CH_2COOH or a $CH_2CH_2COO^-$ group at position 17, and tetracyclic bacteriochlorophyll derivatives devoid of a central metal atom and having a $-CH_2CH_2COOH$ group at position 17, a $-CH_2COOH$ or $-COOH$ group at position 15, a $-COOH$ group at position 13, methyl groups at the positions 2, 7, 12, 18, and ethyl groups at the positions 3 and 8.~~

2. (Currently Amended) ~~A~~ The bacteriochlorophyll ~~derivative~~ compound according to claim 1 containing two negatively charged groups.

3. (Currently Amended) ~~A~~ The bacteriochlorophyll ~~derivative~~ compound according to claim 1 containing three negatively charged groups.

4-9. (Cancelled)

10. (Currently Amended) ~~A~~ The bacteriochlorophyll ~~derivative~~compound of the formula I or II according to claim ~~7~~ 1, wherein R_1 is Y- R_5 ; Y is O, S or NH; and R_5 is a hydrocarbon chain substituted by functional groups selected from of the group consisting of OH, SH, SO_3H, NH_2, $CONH_2$, COOH, COSH, and PO_3H_2.

11. (Currently Amended) ~~A~~ The bacteriochlorophyll ~~derivative~~compound of the formula I or II according to claim ~~7~~ 1, wherein R_5 is the residue of an amino acid, a peptide or a protein.

12. (Currently Amended) ~~A~~ The bacteriochlorophyll ~~derivative~~compound of the formula I or II according to claim ~~7~~ 1 containing a central Pd metal atom.

13. (Currently Amended) ~~A~~ The bacteriochlorophyll ~~derivative~~compound of the formula I according to claim ~~7~~ 1, wherein:

M is Pd;

R_1 is $-NH-(CH_2)_n-SO_3^-R_8^+$, $-NH-(CH_2)_n-COO^-R_8^+$; $-NH-(CH_2)_n-PO_3^{2-}$ $(R_8^+)_2$;

R_2 is methoxy;

R_3 is $-C(=O)-CH_3$;

R_8^+ is a monovalent cation such as K^+, Na^+, Li^+, NH_4^+; and

n is an integer from 1 to 10~~, preferably 2 or 3~~.

14. (Currently Amended) ~~A~~ The bacteriochlorophyll ~~derivative~~compound of the formula II according to claim ~~7~~ 1, wherein:

M represents 2H, divalent Pd, Cu, or Zn or trivalent Mn;

R_1 is $-O^-R_8^+$, $-NH-(CH_2)_n-SO_3^-R_8^+$, $-NH-(CH_2)_n-COO^-R_8^+$ or $-NH-(CH_2)_n-PO_3^{2-}(R_8^+)_2$; or Y-R_5, wherein Y is O, S or NH and R_5 is the residue of an amino acid, a peptide or a protein;

R_2 is C_1-C_6 alkoxy~~, preferably methoxy~~;

R_3 is $-C(=O)-CH_3$, $-CH=N-(CH_2)_n-SO_3^-R_8^+$; $-CH=N-(CH_2)_n-COO^-{}_8^+$; $-CH=N-(CH_2)_n-PO_3^{2-}(R_8^+)_2$; $-CH_2-NH-(CH_2)_n-SO_3^-R_8^+$; $-CH_2-NH-(CH_2)_n-COO^-R_8^+$; or $-CH_2-NH-(CH_2)_n-PO_3^{2-}(R_8^+)_2$;

R_4 is $-NH-(CH_2)_n-SO_3^-R_8^+$; $-NH-(CH_2)_n-COO^-R_8^+$; or $-NH-(CH_2)_n-PO_3^{2-}(R_8^+)_2$;

R_8^+ is a monovalent cation~~, preferably K^+~~; and

m is 1, and n is an integer from 1 to 10~~, preferably 2 or 3~~.

15. (Currently Amended) ~~A~~ The bacteriochlorophyll ~~derivative~~compound of formula II in claim ~~7~~ 1 wherein:

M is divalent Pd;

R_1 is $-O^-R_8^+$, $-NH-(CH_2)_n-SO_3^-R_8^+$, or Y-R_5, wherein Y is O, S or NH and R_5 is the residue of an amino acid, a peptide or a protein;

R_2 is C_1-C_6 alkoxy~~, preferably methoxy~~;

R_3 is $-C(=O)-CH_3$, $-CH=N-(CH_2)_n-SO_3^-R_8^+$; or $-CH_2-NH-(CH_2)_n-SO_3^-R_8^+$;

R_4 is $-NH-(CH_2)_n-SO_3^-R_8^+$; $NH-(CH_2)_n-COO^-R_8^+$; or $NH-(CH_2)_n-PO_3^{2-}(R_8^+)_2$;

R_8^+ is a monovalent cation~~, preferably K^+~~;

m is 1, and n is 2 or 3.

16. (Currently Amended) ~~A~~ The bacteriochlorophyll ~~derivative~~compound of the formula I according to claim 13, consisting of the compound Palladium bacteriopheophorbide a 17^3-(3-sulfopropyl)amide potassium salt.

17. (Currently Amended) ~~A~~ The bacteriochlorophyll ~~derivative~~compound of the formula II according to claim 15, selected from the group consisting of:

Palladium 3^1-oxo-15-methoxycarbonylmethyl-rhodobacteriochlorin 13^1-(2-sulfoethyl) amide dipotassium salt;

3^1-oxo-15-methoxycarbonylmethyl-rhodobacteriochlorin 13^1-(2-sulfoethyl) amide dipotassium salt;

Palladium 3^1-oxo-15-methoxycarbonylmethyl-rhodobacteriochlorin 13^1,17^3-di(3-sulfopropyl)amide dipotassium salt;

Palladium 3^1-(3-sulfopropylimino)-15-methoxycarbonylmethyl-rhodobacterio-chlorin 13^1,17^3-di(3-sulfopropyl)amide tripotassium salt;

Copper(II) 3^1-oxo-15-methoxycarbonylmethyl-rhodobacteriochlorin 13^1-(2-sulfoethyl) amide dipotassium salt;

Zinc 3^1-oxo-15-methoxycarbonylmethyl-rhodobacteriochlorin 13^1-(2-sulfoethyl) amide dipotassium salt;

Manganese(III) 3^1-oxo-15-methoxycarbonylmethyl-rhodobacteriochlorin 13^1-(2-sulfoethyl)amide dipotassium salt;

Palladium 3^1-oxo-15-methoxycarbonylmethyl-rhodobacteriochlorin 13^1-(2-sulfoethyl) amide, 17^3-(N-immunoglobulin G) amide potassium salt;

Palladium 3^1-oxo-15-methoxycarbonylmethyl-rhodobacteriochlorin 13^1-(2-carboxy-ethyl)amide dipotassium salt;

Palladium 3^1-oxo-15-methoxycarbonylmethyl-rhodobacteriochlorin 13^1-(3-phosphopropyl)amide tripotassium salt; and

Palladium 3^1-(3-sulfopropylamino)-15-methoxycarbonylmethyl-rhodobacte-riochlorin 13^1,17^3-di(3-sulfopropyl)amide tripotassium salt.

18. (Original) Palladium 3^1-oxo-15-methoxycarbonylmethyl-rhodobacteriochlorin 13^1-(2-sulfoethyl) amide dipotassium salt.

19. (Currently Amended) A pharmaceutical composition comprising ~~a~~ the bacteriochlorophyll ~~derivative~~compound according to claim 1, and a pharmaceutically acceptable carrier.

20-35. (Cancelled)

36. (Currently Amended) A method for vascular-targeted ~~tumor~~ photodynamic therapy (VTP), which comprises:

(a) administering to an individual in need ~~a~~ the bacteriochlorophyll compound according to claim 1; and

(b) irradiating the local area of the tumor.

37. (Currently Amended) A method for photodynamic therapy of age-related macular degeneration by vascular occlusion, which comprises:

(a) administering to an individual in need ~~a~~ the bacteriochlorophyll compound according to claim 1; and

(b) irradiating the local area of the macular degeneration.

38. (Currently Amended) A method for tumor diagnosis which comprises:

(a) administering to a subject suspected of having a tumor, ~~a~~ the bacteriochlorophyll compound according to claim 1; and

(b) irradiating the subject by standard procedures and measuring the fluorescence of the suspected area, wherein a higher fluorescence indicates tumor sites.

39-41 (Cancelled).

42. (Currently Amended) ~~The~~ A compound Palladium bacteriopheophorbide a 17^3-(3-sulfo-1-oxysuccinimide) ester sodium salt~~, as an intermediate~~.

43. (Currently Amended) A method for the preparation of compounds of formula II ~~In~~ of claim ~~7~~ 1, wherein R_1 is $-O^- R_8^+$; R_2 is $-OCH_3$; R_3 is acetyl; R_4 is a group $-NH-(CH_2)_n-SO_3^-R_8^+$; R_8^+ is a monovalent cation; m is 1 and n is 1 to 10, which comprises:

(i) reacting the corresponding M-bacteriopheophorbide of formula I, wherein R_1 is OH with an aminosulfonic acid of the formula $H_2N-(CH_2)_n-SO_3H$ in a R_8^+-buffer; and

(ii) isolating the desired compound of formula II.

44. (Currently Amended) The method according to claim 43 for preparation of palladium 3^1-oxo-15-methoxycarbonylmethyl-rhodobacteriochlorin 13^1-(2-sulfoethyl) amide dipotassium salt, which comprises: (i) reacting Pd-bacteriopheophorbide a with taurine of the formula $H_2N-(CH_2)_2-SO_3H$ in a K^+ -buffer; and (ii) isolating the ~~title~~ compound.

45. (Currently Amended) A method for the preparation of compounds of formula II in claim ~~7~~ 1, wherein R_1 is $-O^- R_8^+$; R_2 is $-OCH_3$; R_3 is acetyl; R_4 is a group $-NH-(CH_2)_n-COO^- R_8^+$; R_8^+ is a monovalent cation; m is 1 and n is 1 to 10, which comprises:

(i) reacting the corresponding M-bacteriopheophorbide of formula I wherein R_1 is OH with an aminocarboxylic acid of the formula $H_2N-(CH_2)_n-COOH$ in a R_8^+-buffer; and

(ii) isolating the desired compound of formula II.

46. (Currently Amended) A method for the preparation of compounds of formula II in claim ~~7~~ 1, wherein R_1 is $-O^- R_8^+$; R_2 is $-OCH_3$; R_3 is acetyl; R_4 is a group $-NH-(CH_2)_n-PO_3^{2-} (R_8^+)_2$; R_8^+ is a monovalent cation; m is 1 and n is 1 to 10, which comprises:

(i) reacting the corresponding M-bacteriopheophorbide of formula I wherein R_1 is OH with an aminophosphonic acid of the formula $H_2N-(CH_2)_n-PO_3H_2$ in a R_8-buffer; and

(ii) isolating the desired compound of formula II.

47. (Currently Amended) A method for the preparation of compounds of formula II in claim ~~7~~ 1, wherein R_1 and R_4 contain the same negatively charged group, which comprises:

(i) reacting the corresponding M-bacteriopheophorbide with an excess of the aminosulfonic, aminocarboxylic or aminophosphonic acid in a R_8^+-buffer; and

(ii) isolating the desired 13,17-disubstituted ~~derivative~~compound of formula II.

48. (Currently Amended) A method for the preparation of compounds of formula II in claim ~~7~~ 1, wherein R_1 and R_4 are each a group $-NH-(CH_2)_n-SO_3^-R_8^+$; R_2 is $-OCH_3$; R_3 is acetyl; R_8^+ is a monovalent cation; m is 1 and n is 1 to 10, which comprises:

(i) coupling the corresponding M-bacteriopheophorbide of formula I wherein R_1 is OH with N-hydroxy-sulfosuccinimide (sulfo NHS) in the presence of 1-ethyl-3-(3-dimethylaminopropyl)-carbodiimide (EDC);

(ii) reacting the resulting M-bacteriopheophorbide-17^3-N-hydroxy-sulfosuccinimide ester with an excess of an aminosulfonic acid of the formula $H_2N-(CH_2)_n-SO_3H$ in a R_8^+-buffer, thus obtaining a compound of formula I having a sole negatively charged group at position 17;

(iii) reacting the product of step (ii) with an excess of $H_2N-(CH_2)_n-SO_3H$ in a R_8^+-buffer; and

(iv) isolating the desired compound of formula II.

49. (Currently Amended) A method for the preparation of compounds of formula II in claim ~~7~~ 1, wherein R_1 and R_4 are each a group $-NH-(CH_2)_n-COO^-R_8^+$; R_2 is $-OCH_3$; R_3 is acetyl; R_8^+ is a monovalent cation; m is 1 and n is 1 to 10, which comprises:

(i) coupling the corresponding M-bacteriopheophorbide of formula I wherein R_1 is OH with N-hydroxy-sulfosuccinimide (sulfo

NHS) in the presence of 1-ethyl-3-(3-dimethylaminopropyl)-carbodiimide (EDC);

(ii) reacting the resulting M-bacteriopheophorbide-17^3-N-hydroxy-sulfosuccinimide ester with an excess of an aminocarboxylic acid of the formula $H_2N-(CH_2)_n-COOH$ in a R_8^+-buffer, thus obtaining a compound of formula I having a sole negatively charged group at position 17;

(iii) reacting the product of step (ii) with an excess of $H_2N-(CH_2)_n-COOH$ in a R_8^+-buffer; and (iv) isolating the desired compound of formula II.

50. (Currently Amended) A method for the preparation of compounds of formula II in claim ~~7~~ 1, wherein R_1 and R_4 are each a group $-NH-(CH_2)_n-PO_3^{2-}$ R_8^+; R_2 is $-OCH_3$; R_3 is acetyl; R_8^+ is a monovalent cation; m is 1 and n is 1 to 10, which comprises:

(i) coupling the corresponding M-bacteriopheophorbide of formula I wherein R_1 is OH with N-hydroxy-sulfosuccinimide (sulfo NHS) in the presence of 1-ethyl-3-(3-dimethylaminopropyl)-carbodiimide (EDC);

(ii) reacting the resulting M-bacteriopheophorbide-17^3-N-hydroxy-sulfosuccinimide ester with an excess of an aminophosphonic acid of the formula $H_2N-(CH_2)_n-PO_3H_2$ in a R_8^+-buffer, thus obtaining a compound of formula I having a sole negatively charged group at position 17;

(iii) reacting the product of step (ii) with an excess of $H_2N-(CH_2)_n-PO_3H_2$ in a R_8^+-buffer; and (iv) isolating the desired compound of formula II.